UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,564	12/08/2003	Kevin J. Barefield		4239

7590 08/28/2007

Pennington, Moore, Wilkinson, Bell & Dunbar, P.A.
Post Office Box 10095
Tallahassee, FL 32302-2095

EXAMINER	
DANIELS, MATTHEW J	

ART UNIT	PAPER NUMBER
1732	

MAIL DATE	DELIVERY MODE
08/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/730,564	BAREFIELD ET AL.	
	Examiner	Art Unit	
	Matthew J. Daniels	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11,12,20 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11,12,20 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Prosecution on the merits of this application is reopened on claims 11, 12, 20, and 21 considered unpatentable for the reasons indicated below under 35 USC 103(a).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim rejections set forth previously are withdrawn. New references are believed to better show sealing surfaces. This limitation was asserted to be missing from the prior rejection (Appellants' brief, Argument A, first paragraph).

3. **Claims 11 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Flory (USPN 5611636) in view of Newton (USPN 5132069). **As to Claim 11**, Flory teaches a method for attaching an anchor having an internal passage and an open end to a region of strands on an end of a cable, comprising:

a) exposing said region of strands in said cable (Fig. 2, items 4, 6, 8);

b) placing said region of strands within said internal passage of said anchor (Fig. 2, item 10);

e) providing a potting compound which transitions from a liquid state to a solid state over time (5:28);

f) introducing potting compound in a liquid so that the liquid potting compound infuses throughout the region of strands (Figs. 1-8)

h) allowing said liquid potting compound to harden into a solid, thereby locking said region of strands within said anchor (5:32).

Flory is silent to:

c) providing an injector, including

i) a sealing surface;

ii) a needle, extending from said sealing surface, having a first end proximate said sealing surface and a second end distal to said sealing surface;

iii) an injection orifice proximate said second end of said needle;

d) clamping said injector against said open end of said anchor so that said needle protrudes into said region of strands and said sealing surface seals said open end of said anchor;

e) injecting said potting compound, in said liquid state, under pressure into said strand cavity through said injection orifice;

g) withdrawing said needle while said potting compound is still in said liquid state;

However, Newton teaches

c) providing an injector (18, 28), including

i) a sealing surface (16);

ii) a needle (18, 28), extending from said sealing surface (Fig. 2), having a first end proximate said sealing surface and a second end distal to said sealing surface (Fig. 2, item 18);

iii) an injection orifice proximate said second end of said needle (18);

d) clamping said injector against said open end of the cavity (it is submitted that Newton's mold would obviously be clamped closed) so that said needle protrudes into said region of strands and said sealing surface seals said open end of the cavity (Fig. 2, especially items 18 and 16);

e) injecting said potting compound, in said liquid state, under pressure into said strand cavity through said injection orifice (2:4);

g) withdrawing said needle while said potting compound is still in said liquid state (2:4-6, 5:19-26);

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Newton into that of Flory for the following reasons:

a) Newton suggests the method for use with a curable resin, fibers, and a"gallery" or resin distribution core (20), which Flory provides (Fig. 1 shows the resin distribution core of Flory).

b) The method of Flory provides the basic claimed process for applying potting compounds for anchoring the ends of cables. The claimed invention purports to be an improvement because of a sealing surface, injection under pressure, and the use of a removable needle. However, the method of Newton demonstrates that it is generally known to provide a needle, inserted into a fibrous material and core (Fig. 2, items 24, 20),

sealing of mold surfaces (Fig. 2, item 16), and injection of a curable resin under pressure. Thus, the method of Newton was improved in the same manner. One of ordinary skill could have applied the method of Newton to that of Flory using the knowledge already available from the Flory by providing Newton's mold portion, which seals to the base mold and uses an injection needle inserted into the core, with the core of Flory (Fig. 1) to achieve the expected results that the resin would be more thoroughly and evenly distributed among the fiber materials with fewer voids, bubbles or capillary effects.

As to Claim 12, Newton teaches that when providing a sealed mold (Fig. 2), it is necessary to provide a vent (4:62-64) so that air displaced by the injected resin can leave the mold cavity, which would desirably reduce bubbles and voids.

4. **Claims 20 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Schimmeyer (USPN 3570074) in view of Sugerman (USPN 2604362). **As to Claim 20**, Schimmeyer teaches a method for attaching an anchor having an internal passage and an open end to a region of strands on an end of a cable (Figures), comprising:

a) exposing said region of strands in said cable (Fig. 3, item 12a);

b) placing said region of strands within said internal passage of said anchor (Fig. 2);

c) providing a pin including

i) a sealing surface (area between 30 and 31 in Fig. 2)

d) clamping the pin against the open end of the anchor (3:8-11)

e) providing a potting compound which transitions from liquid state to solid state (2:12-14);

f) applying the potting compound in a liquid state to the stands so that the liquid potting compound infuses throughout the region of the strands; and

g) allowing the liquid potting compound to harden into the solid state, locking the region of strands within the anchor (3:12-14, Fig. 2).

Schimmeyer is silent to:

(c)(ii) the injection orifice in the sealing surface;

(d) the injection orifices directed toward the regions of the strands;

(e) injecting the potting compound in a liquid state.

However, these aspects of the invention would have been obvious over Sugerman for the following reasons:

(c)(ii) Sugerman teaches an injection orifice and vent in a sealing surface of a round plate (Fig. 1, items 12, 19, and 20).

(d) Sugerman teaches an orifice directed towards strands (Fig. 1 and Fig. 3)

(e) Sugerman teaches injecting the potting compound (3:44) after placement of the filaments into the mold (col. 3) such that the liquid potting compound infuses throughout the region of strands. Injecting implicitly requires pressure.

The method of Sugerman is reasonably pertinent to the particular problem with which the Applicant was concerned, namely impregnation of fibers or fibrous materials with a potting compound.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Sugerman into that of Schimmeyer for the following reasons:

a) Schimmeyer provides the basic claimed process (as set forth above), upon which the claimed invention purports to be an improvement by the particular order of steps claimed (impregnation after placement in anchor) and the use of an injector. However, Sugerman teaches that it is already known to provide an injection port into a mold for the encapsulation of the ends of fibrous materials by providing an injection port directed towards the strands, providing the claimed order of steps and the injecting step (which implicitly requires pressure). Therefore, Sugerman teaches that the improvement was also known. One of ordinary skill could have rearranged the order of the assembling and injecting steps applied the Sugerman technique to the Schimmeyer process by providing an injection port on the sealing portion to provide the predictable result of embedding of fibers within the thermosetting material.

b) Schimmeyer provides the basic claimed process. Sugerman provides an injecting process that is applicable to the fixing and embedding of fibers in a curable material. One of ordinary skill would have recognized that applying the Sugerman injection method to the Schimmeyer process would have led to improved impregnation of the fibers with the curable resin by injecting the resin, which implicitly requires pressure.

As to Claim 21, Sugerman teaches a vent, which predictably allows air to be displaced from the mold when filling the mold (3:35-45).

Response to Arguments

5. Applicant's arguments in the Appeal Brief field 21 May 2007 have been fully considered but they are not persuasive. The arguments appear to be on the grounds that (a) none of the references disclose the step of clamping the injector against the open end

of the anchor so a needle protrudes into strands and sealing the surface seals an open end of the anchor, and (b) hindsight reasoning has been used.

6. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Here, new references to Schimmeyer and Flory are discussed with regard to the instant claims. In view of the teachings of the Newton and Sugerman references, it is submitted that injection of resin into a closed or sealed mold to embed fibrous materials therein is a conventional process. Application of this old technique to potted anchors (such as that of Schimmeyer or Flory) would lead to the predictable result of pressurization and improved filling of the mold, which would reduce bubbles and voids.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJD 8/20/07

CHRISTINA JOHNSON
SUPERVISORY PATENT EXAMINER